

AMENDMENTS TO THE CLAIMS

Please accept amended claims 1-4, 6-16, and 18-25, and new claims 26 and 27 as follows:

1. (Currently Amended) A method for augmented reality guided instrument positioning, comprising the steps of:

displaying a real view of an environment;

determining a graphics guide for positioning an instrument; and

augmenting the real view with a rendering of the graphics guide such that an appearance a transparency of at least one portion of the graphics guide is modulated with respect to at least one of space and time in and out of an augmented view repeatedly over a predefined time interval, independent of a change in a view of the graphics guide.

2. (Currently Amended) The method according to claim 1, wherein said rendering step comprises the step of varying a the transparency of the at least one portion of the graphics guide with respect to other portions of the graphics guide to provide a substantially unobstructed view through the at least one portion of the graphics guide to at least a portion of the instrument.

3. (Currently Amended) The method according to claim 1, wherein said rendering step comprises the step of varying a the transparency of the at least one portion of the graphics guide during the pre-defined time intervals to provide a substantially unobstructed view through the at least one portion of the graphics guide to at least a portion of the instrument during the pre-defined time intervals.

4. (Currently Amended) The method according to claim 1, wherein said rendering step comprises the step of sequentially varying a the transparency of each of a plurality of portions of the graphics guide during at least one pre-defined time interval to provide a substantially unobstructed view through each of the plurality of portions to at least a portion of the instrument as the transparency of each of the plurality of portions is varied during the at least one pre-defined time interval.

5. (Original) The method according to claim 4, wherein the plurality of portions are consecutive.

6. (Currently Amended) The method according to claim 1, wherein said rendering step comprises the step of varying a the transparency of the at least one portion of the graphics guide such that the at least one portion repeatedly switches between transparent and less transparent.

7. (Currently Amended) The method according to claim 1, wherein said determining step comprises the step of constructing the graphics guide as a line, and said rendering step comprises the step of modulating a the transparency of the line with respect to time so that the line repeatedly fades in and out of view to provide a substantially unobstructed view of the instrument when the line is out of view.

8. (Currently Amended) The method according to claim 1, wherein said determining step comprises the step of constructing the graphics guide as a line, and said rendering step comprises the step of modulating a the transparency of portions of the line so that at least a portion of the instrument is substantially unobstructed when viewed through the portions of the line.

9. (Currently Amended) The method according to claim 1, wherein said determining step comprises the step of constructing the graphics guide as a line, and said rendering step comprises the step of modulating a the transparency of portions of the line with respect to time and space so that at least a portion of the instrument is substantially unobstructed when viewed through the portions of the line during pre-defined time intervals.

10. (Currently Amended) The method according to claim 1, wherein said determining step comprises the step of constructing the graphics guide as a cylinder, and said rendering step comprises the step of modulating a the transparency of the cylinder with respect to time so that the cylinder repeatedly fades in and out of view to provide a substantially unobstructed view of the instrument when the cylinder is out of view.

11. (Currently Amended) The method according to claim 1, wherein said determining step comprises the step of constructing the graphics guide as a cylinder, and said rendering step comprises the step of modulating a the transparency of portions of the cylinder so that at least a portion of the instrument is substantially unobstructed when viewed through the portions of the cylinder.

12. (Currently Amended) The method according to claim 1, wherein said determining step comprises the step of constructing the graphics guide as a cylinder, and said rendering step comprises the step of modulating a the transparency of portions of the cylinder with respect to time and space so that at least a portion of the instrument is substantially unobstructed when viewed through the portions of the cylinder during pre-defined time intervals.

13. (Currently Amended) An apparatus for augmented reality guided instrument positioning, comprising:

a video camera providing a real view of an environment;

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a graphics guide generator for generating a graphics guide for positioning an instrument; and

a rendering device for augmenting the real view with a rendering of the graphics guide such that ~~an appearance~~ a transparency of at least one portion of the graphics guide is modulated with respect to at least one of space and time in and out of an augmented view repeatedly over a predefined time interval, independent of a change in a view of the graphics guide.

14. (Currently Amended) The apparatus according to claim 13, wherein said rendering device varies a the transparency of the at least one portion of the graphics guide with respect to other portions of the graphics guide to provide a substantially unobstructed view through the at least one portion of the graphics guide to at least a portion of the instrument.

15. (Currently Amended) The apparatus according to claim 13, wherein said rendering device varies a the transparency of the at least one portion of the graphics guide during pre-defined time intervals to provide a substantially unobstructed view through the at least one portion of the graphics guide to at least a portion of the instrument during the pre-defined time intervals.

16. (Currently Amended) The apparatus according to claim 13, wherein said rendering device sequentially varies a the transparency of each of a plurality of portions of the graphics guide during at least one pre-defined time interval to provide a substantially unobstructed view through each of the plurality of portions to at least a portion of the instrument as the transparency of each of the plurality of portions is varied during the at least one pre-defined time interval.

17. (Original) The apparatus according to claim 16, wherein the plurality of portions are consecutive.

18. (Currently Amended) The apparatus according to claim 13, wherein said rendering device varies a the transparency of the at least one portion of the graphics guide such that the at least one portion repeatedly switches between transparent and less transparent.

19. (Currently Amended) The apparatus according to claim 13, wherein said graphics guide generator constructs the graphics guide as a line, and said rendering device modulates a the transparency of the line with respect to time so that the line repeatedly fades in and out of view to provide a substantially unobstructed view of the instrument when the line is out of view.

20. (Currently Amended) The apparatus according to claim 13, wherein said determining device constructs the graphics guide as a line, and said rendering device modulates a the transparency of portions of the line so that at least a portion of the instrument is substantially unobstructed when viewed through the portions of the line.

21. (Currently Amended) The apparatus according to claim 13, wherein said graphics guide generator constructs the graphics guide as a line, and said rendering device modulates a the transparency of portions of the line with respect to time and space so that at least a portion of the instrument is substantially unobstructed when viewed through the portions of the line during pre-defined time intervals.

22. (Currently Amended) The apparatus according to claim 13, wherein said graphics guide generator constructs the graphics guide as a cylinder, and said rendering device modulates a the transparency of the cylinder with respect to time so that the cylinder repeatedly fades in and out of view to provide a substantially unobstructed view of the instrument when the cylinder is out of view.

23. (Currently Amended) The apparatus according to claim 13, wherein said graphics guide generator constructs the graphics guide as a cylinder, and said rendering device modulates a the transparency of portions of the cylinder so that at least a portion of the instrument is substantially unobstructed when viewed through the portions of the cylinder.

24. (Currently Amended) The apparatus according to claim 13, wherein said graphics guide generator constructs the graphics guide as a cylinder, and said rendering device modulates a the transparency of portions of the cylinder with respect to time and space so that at least a portion of the instrument is substantially unobstructed when viewed through the portions of the cylinder during pre-defined time intervals.

25. (Currently Amended) A method for augmented reality guided instrument positioning, comprising the steps of:

displaying a real view of an environment from a camera of an endoscopic instrument;

determining a virtual view of the endoscopic instrument in the environment;

determining a graphics guide for positioning an indicating a predetermined position to which the endoscopic instrument is alignable; and

augmenting the real view with a rendering of the virtual view of the endoscopic instrument and the graphics guide in the real view such that an appearance of at least one portion of the graphics guide is modulated with respect to at least one of space and time, wherein said rendering comprises varying a transparency of the at least one portion of the graphics guide with respect to other portions of the graphics guide to provide a substantially unobstructed view through the at least one portion of the graphics guide to at least a the portion of the virtual view of the endoscopic instrument.

26. (New) The method according to claim 1, wherein the real view is a contemporaneous view from a camera of the instrument.

27. (New) The method according to claim 13, wherein the real view is a contemporaneous view from a camera of the instrument.
